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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,323	04/05/2005	Makoto Nakamura	052387	9704

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EXAMINER	
PATEL, DHAVAL V	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
09/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,323	NAKAMURA, MAKOTO	
	Examiner	Art Unit	
	DHAVAL PATEL	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2005*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-18* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1, 3, 5-8, 10-15, 17 and 18, drawn to encoding and modulating the binary signal more related to transmission side of the communication system, classified in class 375, subclass 295.

II. Claims 2 and 4, drawn to demodulating and decoding the modulated signal in communication signal, classified in class 375, and subclass 316.

III. Claims 9 and 16, drawn to constant-envelope three-phase modulator, classified in class 375, subclass 302.

2. Inventions are distinct from each other because of the following reasons: The inventions (i) a binary digital information signal is made into a multivalued ternary signal by means of binary- input/ternary-output error correction code conversion, and is encoded, the phase of a carrier wave is changed and subjected to three-phase modulation in response to the multivalued and encoded ternary signal, and the three-phase modulated signal is transmitted. And a method, (II) information related to a ternary signal is detected from a binary-input/ternary-output error correction code by phase demodulating a three-phase modulated signal, and binary digital information is obtained by decoding the binary-input/ternary-output error correction code using information related to the

ternary signal obtained by the phase demodulation are related as subcombinations usable together and Invention (I) a binary digital information signal is made into a multi-valued ternary signal by means of binary-input/ternary-output error correction code conversion, and is encoded, the phase of a carrier wave is changed and subjected to three-phase modulation in response to the multi-valued and encoded ternary signal, and the three-phase modulated signal is transmitter and method (III) means for delaying or storing a temary signal; response waveform storing means for outputting a quadrature component and an in-phase component corresponding to a transition locus of a carrier wave phase in accordance with patterns of a plurality of temporally consecutive ternary signals; and means for orthogonally modulating a carrier wave using a quadrature component and an in-phase component outputted from the response waveform storing means are related as combination and subcombination disclosed as usable together in a signal combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention (I) is method of encoding and modulating binary signal wherein invention (II) is method of decoding and demodulating the signal. Invention (I) describes modulation and encoding the binary signal and Invention (III) is method of three phases modulating the constant envelope signal to generate orthogonally modulated signal which can be used in phase modulation of the received signal. The subcombination three-phase modulator has its own utility for phase modulation the signal to generate the orthogonal signal.

3. Inventions, (i) a binary digital information signal is made into a multi-valued ternary signal by means of binary- input/ternary-output error correction code conversion, and is encoded, the phase of a carrier wave is changed and subjected to three-phase modulation in response to the multi-valued and encoded ternary signal, and the three-phase modulated signal is transmitted. And a method, (II) information related to a ternary signal is detected from a binary-input/ternary-output error correction code by phase demodulating a three-phase modulated signal, and binary digital information is obtained by decoding the binary-input/ternary-output error correction code using information related to the ternary signal obtained by the phase demodulation and (III) means for delaying or storing a temary signal; response waveform storing means for outputting a quadrature component and an in-phase component corresponding to a transition locus of a carrier wave phase in accordance with patterns of a plurality of temporally consecutive ternary signals; and means for orthogonally modulating a carrier wave using a quadrature component and an in-phase component outputted from the response waveform storing means are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different effects, in the instant case, inventions I and II are distinct because they are referring to encoding and decoding method respectively. Invention I and Invention III are distinct because Invention (I) does not require the particulars of Invention III. Invention III is three-phase modulation

method which has its separate utility for modulation the three phase signal in any optical communication system or

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DHAVAL PATEL whose telephone number is (571)270-1818. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dhaval Patel/
Examiner, Art Unit 2611
9/19/2008
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611